

authors of the application have correctly pointed out, the name *Metaphycus* is widely known and has been cited hundreds of times in the literature, and the genus currently contains over 220 species. It is well known to applied workers as it contains many species of economic importance and has been widely cited in the biological control literature. The name *Aenasioidea*, on the other hand, is virtually unknown.

This is a clear case of usage versus priority. One important aspect in our view is that the authors of the application have acted correctly at every step. They identified that the problem existed (Noyes & Woolley, 1994) and acted according to the Code in continuing to use *Metaphycus* as the valid name pending a decision by the Commission, thus preventing the opportunity for the older name to gain usage. And, finally, they presented an application to the Commission in a timely fashion, resulting in only a year between the time of publication of the original paper and the publication of their application.

Given the facts that the name *Metaphycus* is widely known to both systematists and applied workers, that the name *Aenasioidea* is virtually unknown to both groups, and that the case was handled properly and presented in a short time, we have no hesitation in offering our strong support for this application.

**Comments on the proposed conservation of the names *Labrus* Linnaeus, 1758, *Cichlasoma* Swainson, 1839 and *Polycentrus* Müller & Troschel, 1848 by the designation of neotypes for *Labrus bimaculatus* Linnaeus, 1758 and *L. punctatus* Linnaeus, 1758 (Osteichthyes, Perciformes)**

(Cases 2880 and 2905; see BZN 50: 215-218 and 53: 106-111)

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It is apparent from the presentations of Cases 2880 (BZN 50: 215-218; September 1993) and 2905 (BZN 53: 106-111; June 1996) that application of the Code would result in unfortunate name changes for certain fishes in the families CICHLIDAE, LABRIDAE and NANDIDAE unless the Commission exercises its plenary powers to retain widespread usage. With the proposers, I wholeheartedly support such action and approve overriding the Code to achieve stability in nomenclature. However, my preferred solutions to the problems differ from those proposed by Dr R. Fricke and Dr C.J. Ferraris in Case 2905.

Case 2880 by Dr H.-J. Paepke recommends suppression of the specific name of *Labrus punctatus* Linnaeus, 1758 and, with the other proposals of para. 8 on BZN 50: 216-217, this would assure continuity of the use of *Polycentrus schomburgkii* Müller & Troschel, 1848. I approve these moves. Application of the name *punctatus* for either the South American nandid as suggested by Kullander (1983, p. 84) or for the American cichlid well known as *Cichlasoma bimaculatum* as proposed by Fricke & Ferraris (Case 2905, para. 8) would unnecessarily bring an unused specific name into use for a familiar species and is thus objectionable.

Case 2905 points out the unfortunate circumstance that *Labrus bimaculatus* Linnaeus, 1758 has been regarded as the type species of both *Cichlasoma* (CICHLIDAE)

and *Labrus* (LABRIDAE). The authors properly deplore the consequences. Solutions to the problem should certainly not generate changes in the family group names CICHLIDAE or LABRIDAE, nor need they.

Fricke & Ferraris advocate (para. 9(2) on BZN 53: 109) placement of (a) *Labrus* Linnaeus, 1758; (b) *Cichlasoma* Swainson, 1839; and (c) *Polycentrus* Müller & Troschel, 1848 on the Official List. I concur, but differ as to the type species to be designated for *Labrus* and *Cichlasoma*, as I discuss below.

*Labrus mixtus* Linnaeus, 1758 from 'Liburni' (the Adriatic coast of the former Yugoslavia) and *L. bimaculatus* Linnaeus, 1758 from 'M. Mediterraneo' (likely an error; see comment by Fernholm & Wheeler, 1983, cited by Fricke & Ferraris, para. 4 of their application) have the same authorship and date. Both names have at times been associated with the 'cuckoo wrasse', a common labrid fish of the Mediterranean and eastern Atlantic (see Wheeler, 1969, pp. 368–369; Bauchot & Quignard, 1973, pp. 426–427). Fricke & Ferraris (para. 7) proposed that the name *L. bimaculatus* be maintained in the LABRIDAE by designation of a neotype. They contend that most authors continue to use the name. On the other hand, Wheeler (1969, p. 368) wrote: 'There is little justification, other than that of page priority, in using either the name *Labrus ossifagus* [another Linnaean synonym] or *L. bimaculatus* Linnaeus, 1758, for this fish. Indeed, those names had been considered and rejected by numerous authors in the nineteenth century. *L. mixtus* has received far wider usage than any of the numerous synonyms available for the species'. In their extensive synonymy of the cuckoo wrasse, Bauchot & Quignard (1973, p. 426) cite 15 references that used *L. bimaculatus* (six before and nine after 1950); for *L. mixtus* they cite 35 references (29 before and six after 1950).

There is no doubt that *Labrus mixtus* as described by Linnaeus (1758) applies to the cuckoo wrasse. However, the brief description of *L. bimaculatus* Linnaeus fits the widespread South American cichlid currently assigned that name. Dr Sven Kullander, a student of the South American CICHLIDAE, wrote (1983, p. 83): 'How this fish [cuckoo wrasse] can be identified as the Linnaean species [*Labrus bimaculatus*] I simply do not understand. Page priority seems to be the reason for using the name *L. bimaculatus* as a senior synonym of *L. mixtus* ...'. The South American cichlid currently known as *Cichlasoma bimaculatum* (Linnaeus) has a lateral dark blotch and another at the caudal fin base, as recorded by Linnaeus, hence 'bimaculatus'. Females and juveniles of the cuckoo wrasse (*Labrus mixtus*) have three prominent dark spots posteriorly on the dorsal surface (Wheeler, 1969, p. 368) (males lack these spots). If Linnaeus were describing a cuckoo wrasse instead of the South American cichlid he would assuredly have called it *trimaculatus*, not *bimaculatus*! Linnaeus also gave the anal fin-ray formula 4/12 [= four spines and eight soft rays], appropriate for northern populations of the black acara (*Cichlasoma bimaculatum*) but not for the cuckoo wrasse, which consistently has three anal spines. In view of this, it is incongruous that Fricke & Ferraris propose the application of the name *Labrus bimaculatus* Linnaeus, 1758 as the type species of *Labrus* Linnaeus, 1758. If *L. mixtus* Linnaeus is designated as the type species the stability of *Labrus* is assured, and its type species is properly aligned with the LABRIDAE.

As indicated by Fricke & Ferraris (para. 6 of their application), *Labrus bimaculatus* has been incorrectly cited as the type species of *Cichlasoma* by Eigenmann (1912), Kullander (1983), Eschmeyer & Bailey (1990), and others. The type species by

monotypy is *Labrus punctata* [sic] 'Bloch, 1792' (see Bailey, 1957, p. 303). The name *Labrus punctatus* as used by Bloch (1792, p. 26 and pl. 295, fig. 1) refers to the cichlid fish known to contemporary authors as the black acara, *Cichlasoma bimaculatum* (Linnaeus, 1758). Bloch's figure and description are unmistakable. The logical choice for the type species of *Cichlasoma* is *Labrus bimaculatus*, the fish actually described by Bloch and selected by Swainson (1839) to typify *Cichlasoma*. This would preserve current nomenclature for the cichlid *Cichlasoma bimaculatum* and eliminate restoration of the unused *L. punctatus*.

Fricke & Ferraris (para. 6) comment on the restriction by Kullander (1983, pp. 65–89, pls. 1 and 2) of *C. bimaculatum* to a form distributed only from Guiana to Venezuela. The *bimaculatum* 'complex', usually regarded as including one or two species, ranges widely in South America (Kullander, 1983, p. 284) and was treated by Kullander as an array of 12 allopatric species, of which he described eight as new. Kullander wrote (p. 281): 'The twelve species of *Cichlasoma* that I have distinguished differ very little from each other. They are so similar that without comparative material, locality data may be more important than characters in curatorial identification routines. Nevertheless, some groups of species may be distinguished, and it is clear that speciation has not been radiative but sequenced chronologically'. Kullander (1983, pp. 10, 263) correctly indicated that *Aequidens portalegrensis* (Hensel, 1870), characterized by three, rarely four, anal spines, and *Cichlasoma bimaculatum*, with two to six, usually four, anal spines, are congeneric. In the preamble to his key (p. 282) Kullander said: 'Anal-fin spine number is the leading character; although known to vary in most species, aberrant specimens are, however, rare'. In the primary dichotomy Kullander includes six 'species' from the Paraná basin and southern tributaries to the Amazon that modally have three anal spines; the other six nominal 'species', including *bimaculatum*, occur in the Amazon River, northern South America, and eastern Brazil; they modally have four anal spines. A geographic difference in anal spine count is unquestioned, but it seems overvalued. *C. boliviense* from the Madeira basin, characterized by Kullander as a three-spined 'species', has in 52 counts by me 12 (23%) with four anal spines, including all eight specimens in a series from the Rio Guaporé (the type locality). These might be identified as intergrades. I prefer to regard the 12 nominal forms as one species, a complex of two, or possibly more, subspecies under the name *Cichlasoma bimaculatum*.

It should be noted that *C. bimaculatum* is introduced and spreading actively in Florida. That stock typically has four anal spines and was presumably an aquarium importation from northern South America (see Hensley & Courtenay, 1980, p. 764).

The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary powers:

- (a) to approve the proposals in para. 8 of Case 2880 (BZN 50: 216–217), thus conserving the customary use of the name *Polycentrus schomburgkii* Müller & Troschel, 1848;
- (b) to set aside all previous fixations of type species for the following nominal genera:
  - (i) *Labrus* Linnaeus, 1758 and to designate *Labrus mixtus* Linnaeus, 1758 as the type species;

- (ii) *Cichlasoma* Swainson, 1839 and to designate *Labrus bimaculatus* Linnaeus, 1758 as the type species;
- (2) to place on the Official List of Generic Names in Zoology the following names:
  - (a) *Labrus* Linnaeus, 1758 (gender: masculine), type species by designation in (1)(b)(i) above *Labrus mixtus* Linnaeus, 1758;
  - (b) *Cichlasoma* Swainson, 1839 (gender: neuter), type species by designation in (1)(b)(ii) above *Labrus bimaculatus* Linnaeus, 1758;
- (3) to place on the Official List of Specific Names in Zoology the following names:
  - (a) *mixtus* Linnaeus, 1758, as published in the binomen *Labrus mixtus* (specific name of the type species of *Labrus* Linnaeus, 1758);
  - (b) *bimaculatus* Linnaeus, 1758, as published in the binomen *Labrus bimaculatus* (specific name of the type species of *Cichlasoma* Swainson, 1839).

### **Additional references**

- Bailey, R.M.** 1957. *Cichlaurus* versus *Cichlasoma* as the name for a genus of perciform fishes. *Copeia*, 1957(4): 303–304.
- Hensley, D.A. & Courtenay, W.R.** 1980. *Cichlasoma bimaculatum* (Linnaeus), black acara. P. 764 in Lee, D.S. et al., *Atlas of North American freshwater fishes*. x, 854 pp. North Carolina State Museum of Natural History, Raleigh.

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Linnaeus (1758) established the genus *Labrus* for a group of 40 species of spiny-rayed fish. Included were *Labrus bimaculatus* (p. 285) and *L. punctatus* (p. 285) based on his own descriptions of 'Sciaena bimaculata' (Linnaeus, 1754, p. 66, pl. 31, fig. 6) and 'Sciaena punctata' (Linnaeus, 1754, p. 66, pl. 31, fig. 5), *L. ossifagus* (p. 286) described from a specimen in Linnaeus's own possession, and *L. mixtus* (p. 287) based on a species in Artedi (1738). To the description of *punctatus* Linnaeus added a reference to Gronovius's (1754, p. 36) description of 'Labrus bruneus, ossiculo ...', which was also figured by Gronovius (1756, pl. 5, fig. 4).

Revisions of the Linnaean fish collections (Fernholm & Wheeler, 1983; Wheeler, 1985, 1991) have clarified the status and identifications of the types of *L. bimaculatus*, *L. punctatus* and *L. ossifagus*, and demonstrated that no type material of *L. mixtus* is preserved. I (Kullander, 1983, p. 84) designated the sole surviving specimen (catalogue no. NRM 43; now recatalogued as NRM 4) as the lectotype of *L. punctatus*. It had already been identified by Smitt (1892, p. 11) as a specimen of the species described by Müller & Troschel (1849a, 1849b) as *Polycentrus schomburgkii* (para. 4 of Case 2880).

The problem, set out by Fricke & Ferraris in their application (Case 2905) but already noted by myself (Kullander, 1983), is that:

- (1) The holotype of *Labrus bimaculatus* represents a species of the family CICHLIDAE, usually referred to as *Cichlasoma bimaculatum*, but the name has also occasionally been used for a species of the family LABRIDAE, well known otherwise as *L. mixtus*.

- (2) The nominal species *L. bimaculatus* has been considered as the type species of both *Cichlasoma* Swainson, 1839 (CICHLIDAE) and *Labrus* Linnaeus, 1758 (LABRIDAE).
- (3) The lectotype of *L. punctatus* represents a species of the family NANDIDAE (or POLYCENTRIDAE) and possibly the same as *Polycentrus schomburgkii* Müller & Troschel, 1849, a name preferred by H.-J. Paepke in an application to the Commission (Case 2880; BZN 50: 215–218).
- (4) *L. punctatus* has been considered as the type species of both *Polycentrus* Müller & Troschel, 1849 and *Cichlasoma*.

Fricke & Ferraris's application (Case 2905) makes a number of assertions and proposals to which I cannot agree. Their proposals constitute an alternative rather than the most parsimonious approach to stability. Instead I would like to make a clear case for the conservation of existing usage and type specimens. Paepke's related application (Case 2880) requires simultaneous consideration. Paepke requested the Commission to give the name *Polycentrus schomburgkii* priority over *L. punctatus*, arguing that *schomburgkii* is a better known name.

In designating (Kullander, 1983) a lectotype for *L. punctatus* it seemed appropriate to me (see above) to select the single remaining specimen, which Linnaeus (1754) figured and described in some detail. Other nominal species included in *Polycentrus* are *P. schomburgkii* Müller & Troschel, 1849 from Guyana, *P. tricolor* Gill, 1858 from Trinidad, and *Mesonauta surinamensis* Sauvage, 1882 from Surinam. Both Fernholm & Wheeler (1983, p. 253) and Paepke (BZN 50: 216, para. 5) considered the poor quality of Linnaeus's (1754) figure of *punctatus* to have prevented its true identification as a nandid. In fact the figure is quite good, showing well the shape and colour pattern of a *Polycentrus* species. I suggest that poor familiarity with *Polycentrus* may have misled Fernholm & Wheeler, and that post-Linnaean authors examining the plate (Linnaeus, 1754, pl. 31) simply missed looking at *L. punctatus* (fig. 5) because of the much more obvious *L. bimaculatus* (fig. 6). Other contributing factors may well have been the limited availability of Linnaeus's (1754) work so that authors followed published statements rather than make their own examination, and the reluctance of taxonomists to restudy Linnaean type material.

I do not agree with the assertion by Paepke (Case 2880) and by Fricke & Ferraris (BZN 53: 107, para. 5) that *schomburgkii* is a well known name meriting protection. Paepke (BZN 53: 215, para. 4, and 216, para. 7) gives the impression that the taxonomy of *Polycentrus* (with four nominal species so far) has been critically examined. However, no such analysis has ever been made; *Polycentrus* has never been revised at species level and the types of *punctatus*, *schomburgkii* and remaining nominal species have never been compared. The species figure mainly in aquarium and behaviour literature (note the references cited by Paepke, BZN 50: 216, para. 5). Eigenmann & Eigenmann (1891, p. 66) listed *P. tricolor* and *P. schomburgkii* as valid but the names were synonymized without comment by Regan (1906) and *tricolor* has hardly been used since. *Mesonauta surinamensis* was synonymized with *schomburgkii* by Pellegrin (1904, p. 221). However, several recent studies of Guianan fishes (see, for example, Kullander & Nijssen, 1989) show that there is considerable diversity, with closely related species replacing each other in parallel river drainages. In my view any decision as to relative priorities of *P. schomburgkii* and *L. punctatus* should be left to

a systematic revision evaluating their status. With current information, *P. schomburgkii*, *L. punctatus*, *M. surinamensis* and *P. tricolor* are all potentially valid species.

The date of publication of vol. 3 of Schomburgk's *Reisen in Britisch-Guiana*, in which Müller & Troschel published the section on fish and included the new taxon *Polycentrus schomburgkii*, is commonly cited as 1848, as given on the title page. However, Whitehead (1973, pp. 6, 214), referring to *Börsenblatt für den deutsche Buchhandel*, No. 21, gives the publication date as 13 March 1849. Part 3 of Müller & Troschel's *Horae Ichthyologicae* was also published in 1849, but no more precise information is known. The description of *Polycentrus* and *P. schomburgkii* could have priority in either publication but for the sake of continuity I suggest that Schomburgk's work continue to be cited as the earlier.

With regard to the cichlid *Cichlasoma* (BZN 53: 107, para. 3), Fricke & Ferraris should consider that the combination *Cichlasoma bimaculatum* is very widely used and that *bimaculatus* is the long accepted type species of *Cichlasoma*. In establishing *Cichlasoma*, Swainson (1839) referred exclusively to the figure (pl. 295, fig. 1) published by Bloch (1792). The figure is captioned 'Labrus punctata' but clearly shows a cichlid fish, identified by Kullander (1983) and most other authors as *Cichlasoma bimaculatum* (Linnaeus). Gill (1858) was the first author to use Swainson's cichlid names and he referred to 'Labrus punctatus Bloch' as the type species of *Cichlasoma*. Under Article 68d of the Code *L. punctatus* is the type species by monotypy of *Cichlasoma* and, through my (Kullander, 1983) lectotype designation, *Cichlasoma* Swainson, 1839 is a senior subjective synonym of *Polycentrus* Müller & Troschel, 1849. However, 'Labrus punctatus' as used by Bloch is clearly a misidentification of *Labrus punctatus* Linnaeus, 1758 and Article 70b applies. I now propose that the Commission use its plenary powers to select the species actually involved, *Labrus bimaculatus*, as the type species of *Cichlasoma*.

Fricke & Ferraris (BZN 53: 108, para. 9) assert that the name *Cichlasoma bimaculatum* (CICHLIDAE) is little used compared with the combination *Labrus bimaculatus* (LABRIDAE). This is not so. *Cichlasoma* used to be one of the most species-rich cichlid genera and, although now applied to 12 South American species, the name is retained in some form for almost a hundred species in Central America pending revision (see Kullander, 1983). The name *Cichlasoma bimaculatum* is widely cited in current literature, and unlike the combination *Labrus bimaculatus* which has always co-existed with *Labrus mixtus* and *L. ossifagus* (see below), it has been one of the most stable names in Neotropical ichthyology since Gill's (1858) and, particularly, Pellegrin's (1904) and Regan's (1905) revisions. To adopt *punctatus* as the cichlid species name in place of *bimaculatum* would severely upset stability and be contrary to long accepted usage.

The European 'cuckoo wrasse' has an impressive synonymy but three names in particular, all proposed by Linnaeus (1758), have been commonly associated with the species (see Wheeler, 1992, p. 21). Southern European authors (Quignard & Pras, 1986, p. 927, for example) currently mostly prefer the name *Labrus bimaculatus* whereas Danish, Norwegian, Swedish, German, British and Chinese authors use either *L. mixtus* (see, for example, Sundström, 1877, p. 243; Stuxberg, 1894, p. 347; Otterstrom, 1912, p. 131; Rauther, 1921, p. 98; Mohr, 1927, p. XII.h 87 (*L. ossifagus* in synonymy); Nybelin, 1942, p. 65; Norman, 1947, p. 299; Rosén, Lindroth & Svensson, 1955, plate opposite p. 32 (but *L. ossifagus*, *L. 'ossifragus'* and *L. mixtus*

listed in text entry, p. 43); Wheeler, 1969, p. 368; 1978, p. 276; 1991, p. 179; 1992, p. 21; Terosal, 1981, p. 106; Yang, 1982, p. 639; Hilldén, 1984; Häkkinen, 1986, p. 176; and further references in this comment) or *L. ossifagus* (often spelt 'ossifragus') (see, for example Lönnberg & Gustafsson, 1936; Nybelin, 1937, p. 17; Ursing, 1956, p. 130; Hanström & Johnels, 1962, p. 449; Curry-Lindahl, 1975, p. 173; Muus & Dahlström, 1977, p. 128; and other references herein). The several other synonyms have rarely been used after their first publication (see Bauchot & Quignard, 1973, p. 426).

*Labrus* was revised and the status of *Labrus mixtus* was discussed at some length by Valenciennes (in Cuvier & Valenciennes, 1839, pp. 46–58 especially) who included *L. ossifagus* in the synonymy of *L. mixtus* but did not mention *L. bimaculatus*. Valenciennes suggested the synonymy on the basis of fin counts, and although he noted the similarity in dorsal fin count, he considered the primary (female) phase to be a distinct species, *L. trimaculatus* Gmelin, 1789. Kroyer (1838–1840, pp. 498–520, especially pp. 511 and 520) included *L. ossifagus* in *L. mixtus*, tentatively (p. 511) and with reference to Valenciennes (p. 512). There was no mention of *L. bimaculatus*. Sundevall (1842, p. 160), used the name *L. mixtus* for the cuckoo wrasse; *L. ossifagus* was mentioned with reference to Valenciennes's synonymisation with *L. mixtus*, and there was no mention of *L. bimaculatus*.

Monographers of the Scandinavian fish fauna, Nilsson (1855, p. 265) and Lilljeborg (1884, p. 429) used *L. mixtus* and did not mention *L. ossifagus* or *L. bimaculatus*. Günther (1862, p. 74) used *L. mixtus*, listing *L. ossiphagus* (sic) and *L. bimaculatus* as synonyms. He also (p. 276) listed *L. bimaculatus* as *Acara bimaculata* in the CICHLIDAE. Smitt (1892, p. 10) reviewed the status of the various names applied to the cuckoo wrasse; he followed Valenciennes in selecting *L. mixtus* over *L. ossifagus*, clearly explained that the specimen of *L. punctatus* studied by Linnaeus (1754, 1758) and preserved in the Swedish Museum of Natural History, Stockholm, belongs to the species described as *P. schomburgkii* by Müller & Troschel (1849a, 1849b), and that the holotype of *L. bimaculatus* is a cichlid. Lönnberg (1896, p. 42) adopted *L. ossifagus* as a senior synonym of *L. mixtus* under the erroneous assumption that *L. mixtus* was first described by Fries & Ekström (1836–1857). After reading Thunberg (1787, p. 23), Lönnberg changed the name to *ossifragus*, considering *ossifagus* to be a lapse, and subsequent to 1896 *L. ossifagus* and *L. ossifragus* were commonly used in Swedish literature. It is plain that *L. ossifagus* was universally considered a junior synonym of *L. mixtus* from 1839 to 1896, and that subsequent use of *ossifagus* has been limited (see Wheeler, 1992, p. 21).

It seems likely that the misidentification of *Labrus bimaculatus* as the European cockoo wrasse stems from Linnaeus's (1758) erroneous type locality (Mediterranean Sea) and Gmelin's (1789, p. 1289) insertion of a reference to Pennant (1769, p. 205) which extended the fish's range to the British Isles and conveyed a European status on the species. Linnaeus's (1754, 1758) descriptions of *bimaculatus*, and the specimen described and figured by Linnaeus (1754, p. 66, pl. 31, fig. 6; now catalogued as NRM 7 and previously as NRM 42), do not give any reason to identify the taxon as any known European labrid, and it has been firmly included in the CICHLIDAE since Günther (1862). It is clear that Quignard (1966) was in error in citing *L. bimaculatus* as included in *Labrus* and that this has been uncritically followed by some later authors. In Fricke & Ferraris's application (para. 1) Jordan (1891) is considered to have provided the first valid type species designation for *Labrus*. In Jordan's revision

of the European and American LABRIDAE, nomenclatural decisions include reference to page priority, and consequently (p. 611) *Labrus bimaculatus* (described on p. 285 in Linnaeus, 1758) is chosen as the senior synonym of *L. ossifagus* (p. 286) and *L. mixtus* (p. 287): 'We follow Günther [1862], Day [1880–1884], and Steindachner [1868] in regarding the species called *carnicus* and *bimaculatus* as the female of *Labrus mixtus*. The name *bimaculatus* stands first in the *Systema Naturae*, for which reason we have adopted it, although it is by no means an appropriate one'. Thus, *Labrus bimaculatus* appears as the type species of *Labrus* in Jordan (1891).

In my view stability is best attained by simply recognising *Labrus mixtus* Linnaeus, 1758 as the type species of *Labrus* Linnaeus, 1758. *Labrus mixtus* was based on Artedi's (1738, p. 34 (*Genera*) and p. 57 (*Synonymia*)) '*Labrus ex flavo & coeruleo varius, dentibus anterioribus majoribus*', in turn based on Willughby's (1686, p. 322) '*Turdus major varius praecedenti similis*'. No original type material of *L. mixtus* is known to exist. The holotype of *L. ossifagus* is preserved in the collection of the Uppsala University Zoological Museum (catalogue number UUZM 193). The specimen was listed by Thunberg (1787, p. 23) and in manuscripts listed by Wheeler (1991, p. 179), and recognized as Linnaean type material by Lönnberg (1896), who identified it as being the same species as *L. mixtus*. Wheeler (1991, fig. 18) figured the specimen and confirmed this identification. This specimen represents the cuckoo wrasse as currently and universally understood. It is most suitable as the neotype of *L. mixtus* and I now designate it as such. This designation, together with Valencienne's (1839) first reviser selection of *L. mixtus* as the valid name, renders the latter a senior objective synonym of *L. ossifagus*.

Fricke & Ferraris say (BZN 53: 108, para. 7) that if their application is not approved the family group name CICHLIDAE will need to be replaced since it will be a junior synonym of LABRIDAE following the transfer of the name *Labrus* to the genus now known as *Cichlasoma*. My proposals below will accomplish the necessary protection of the name CICHLIDAE. It may also be pointed out that the name PHARYNGODOPILIDAE Cocchi, 1864 is not a synonym of CICHLIDAE as Fricke and Ferraris have indicated. The PHARYNGODOPILIDAE were recognized for fossil pharyngeal tooth plates. In having teeth positioned across the median portion of the lower pharyngeal tooth plate, which characterizes the families EMBIOTOCIDAE, LABRIDAE and POMACENTRIDAE but not the CICHLIDAE (see Stiassny & Jensen, 1987, p. 288), the genus *Pharyngodopilus* Cocchi, 1864 is not a cichlid.

The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to set aside the proposals in Cases 2880 and 2905;
- (2) to use its plenary power to set aside all previous fixations of type species for the following nominal genera:
  - (a) *Labrus* Linnaeus, 1758 and to designate *Labrus mixtus* Linnaeus, 1758 as the type species;
  - (b) *Cichlasoma* Swainson, 1839 and to designate *Labrus bimaculatus* Linnaeus, 1758 as the type species;
- (3) to place on the Official List of Generic Names in Zoology the following names:
  - (a) *Labrus* Linnaeus, 1758 (gender: masculine), type species by designation in
    - (2)(a) above *Labrus mixtus* Linnaeus, 1758;
  - (b) *Cichlasoma* Swainson, 1839 (gender: neuter), type species by designation in
    - (2)(b) above *Labrus bimaculatus* Linnaeus, 1758;

- (4) to place on the Official List of Specific Names in Zoology the following names:
- (a) *bimaculatus* Linnaeus, 1758, as published in the binomen *Labrus bimaculatus* and as defined by the holotype (catalogue no. NRM 7 in the Swedish Museum of Natural History, Stockholm) (specific name of the type species of *Cichlasoma swainson*, 1839);
  - (b) *mixtus* Linnaeus, 1758, as published in the binomen *Labrus mixtus* and as defined by the neotype (catalogue no. UUZM 193 in the Uppsala University Zoological Museum) designated above (specific name of the type species of *Labrus* Linnaeus, 1758);
  - (c) *punctatus* Linnaeus, 1758, as published in the binomen *Labrus punctatus* and as defined by the lectotype (catalogue no. NRM 4 in the Swedish Museum of Natural History, Stockholm) designated by Kullander (1983);
- (5) to place on the Official List of Rejected and Invalid Specific Names in Zoology the following names:
- (a) *ossifagus* Linnaeus, 1758, as published in the binomen *Labrus ossifagus* (a junior objective synonym of *Labrus mixtus* Linnaeus, 1758);
  - (b) *ossifragus* Lönnberg, 1896, as published in the binomen *Labrus ossifragus* (a junior objective synonym of *Labrus ossifagus* Linnaeus, 1758).

## Additional references

- Artemi, P.** 1738. *Ichthyologia sive opera omnia de Piscibus scilicet: Biblioteca Ichthyologica ...* Wishoff, Lugduni Batavorum.
- Curry-Lindahl, K.** 1975. *Fiskarna i färg. 8:e uppl.* 231 pp. AWE/Gebers, Stockholm.
- Cuvier, [G.] & Valenciennes, A.** 1839. *Histoire naturelle des poissons*, vol. 13. Pls. 301–400. Pitois-Levrault, Paris.
- Day, F.** 1880 1884. *The fishes of Great Britain and Ireland*, vol. 1. cxii, 336 pp. Williams & Norgate, London & Edinburgh.
- Gmelin, J.F.** 1789. *Caroli a Linné Systema Naturae*, vol. 1, part 3. Pp. 1033–1516.
- Günther, A.** 1862. *Catalogue of the fishes in the British Museum*, volume 4. British Museum, London.
- Hanström, B. & Johnels, A.G.** 1962. Band 6, Fiskar 2 benfiskar. In Hanström, B. (Ed.), *Djurens värld*. 611 pp. Förlagshuset Norden, Malmö.
- Härkönen, T.** 1986. *Guide to the otoliths of the bony fishes of the Northeast Atlantic*. 256 pp. Danbiu ApS. Biological Consultants, Hellerup.
- Hilldén, N.-O.** 1984. *Behavioural ecology of the labrid fishes (Teleostei: Labridae) at Tjärnö on the Swedish west coast*. Doctoral thesis (published). 57 pp., plus 7 separately paginated reprints and manuscripts. Department of Zoology, University of Stockholm.
- Kroyer, H.** 1838 1840. *Danmark's fiske*, vol. 1. cii, 616 pp. Triers, Copenhagen.
- Lilljeborg, W.** 1884. *Sveriges och Norges fiskar* [Also as: *Sveriges och Norges Fauna, fiskarne*], fasc. 2, pp. 209–496. Schultz, Upsala.
- Lönnberg, E.** 1896. Linnean type-specimens of birds, reptiles, batrachians and fishes in the Zoological Museum of the R. University in Upsala. *Bihang till Kongliga Svenska Vetenskaps-Akademien Handlingar*, 22(4, 1): 1–45.
- Lönnberg, E. & Gustafson, G.** 1936. Till kännedomen om blågyltans (*Labrus ossifagus* L.) levnadshistoria. *Fauna och Flora*, 1936: 145–155.
- Mohr, E.** 1927. *Teleostei Physoclosti 12. Labrifomes*. Pp. XII, h85 92 in Duncker, G., Ehrenbaum, E., Kyle, H.M., Mohr, E.W. & Schnakenbeck, W., *Fische der Nord- und Ostsee*. Akademische Verlagsgesellschaft, Leipzig.
- Muus, B.J. & Dahlström, P.** 1977. *Havsfisk och fiske*. Tredje upplagan. 248 pp. Norstedt, Förlag. (Translated from *Havfisk og fiskeri i Nordvesteuropa*. G.E.C. Gads Forlag, Denmark).

- Nilsson, S.** 1855. *Skandinavisk fauna. Fjerde delen: fiskarna*. Gleerup, Lund.
- Norman, J.R.** 1947. *A history of fishes*, Ed. 3. xv, 463 pp. Benn, London.
- Nybelin, O.** 1937. *Våra fiskar och hur man känner igen dem*, part 2 (Havsfiskar). 83 pp. Bonnier, Stockholm.
- Nybelin, O.** 1942. Läppfiskfamiljen, Labridae. Pp. 65–68 in Andersson, K.A., *Fiskar och fiske i Norden*, part 1 (Fiskar och fiske i havet). Natur och Kultur, Stockholm.
- Otterstrom, C.V.** 1912. *Danmarks Fauna*. Fisk I (Pigfinnesfisk). 198 pp. Gads Forlag, Copenhagen.
- Pellegrin, J.** 1904. Contribution à l'étude anatomique, biologique et taxinomique des poissons de la famille des cichlidés. *Mémoires de la Société Zoologique de France*, **16**: 41–399.
- Pennant, T.** 1769. *British zoology*, Ed. 2. Chester.
- Rauther, M.** 1921. *Das Tierreich IV' Fische. Zweite, umgearbeitete Auflage*. Sammlung Göschen, Vereinigung wissenschaftlicher. 150 pp. Gruther, Berlin.
- Regan, C.T.** 1905. A revision of the fishes of the American cichlid genus *Cichlosoma* and of the allied genera. *Annals and Magazine of Natural History* (7)**16**: 60–77, 225–243, 316–340, 433–445.
- Rosén, N., Lindroth, A. & Svensson, G.S.O.** (Eds.) 1955. *Svenskt fiskelexikon*. 707 pp. Nordiska Uppslagsböcker, Stockholm.
- Smitt, F.A.** 1892. *Skandinaviens fiskar mälade af W. von Wright beskrifna av B. Fries, C.U. Ekström och C. Sundevall. Andra upplagan. Bearbetning och fortsättning*. Text. Förra delen. Norstedt, Stockholm.
- Steindachner, F.** 1868. Ichthyologischer Bericht über eine nach Spanien und Portugal unternommene Reise (Sechste Fortsetzung). Übersicht der Meeresfische an den Küsten Spaniens und Portugals (II. Fortsetzung). *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe*, **57**(1): 667–739.
- Stiassny, M.L.J. & Jensen, J.S.** 1987. Labroid intrarelationships revisited: morphological complexity, key innovations, and the study of comparative diversity. *Bulletin of the Museum of Comparative Zoology*, **151**: 269–319.
- Stuxberg, A.** 1894. *Sveriges och Norges Fiskar*. Tredje häftet. Wettergren & Kerber, Göteborg.
- Sundevall, C.J.** 1842. Blåsnultra, *Labrus mixtus*, Linn. Pp. 160–164 in Fries, B.F., Ekström, C.U. & Sundevall, C.J., *Skandinaviens Fiskar*. Norstedt, Stockholm.
- Sundström, C.R.** 1877. *Fauna öfver Sveriges ryggradsdjur*. 4, 332 pp. Lindström, Stockholm.
- Terofal, F.** 1981. *Fiskar*. 144 pp. ICA Bokförlag, Västerås. (Translated from *Fische*, BLV Verlagsgesellschaft, Munich, 1978).
- Thunberg, C.P.** 1787. *D.D. Museum naturalium Academiae Upsaliensis. Partem secundam. Publico examini proponit, Laur. Magn. Holmer*. Pp. 19–32. Upsaliae.
- Ursing, B.** 1956. *Fiskar. Kräldjur Groddjur Fiskar*. 216 pp. Nordisk Rotogravyr, Stockholm.
- Wheeler, A.** 1978. *Key to the fishes of northern Europe*. Warne, London.
- Wheeler, A.** 1985. The Linnaean fish collection in the Linnean Society of London. *Zoological Journal of the Linnean Society*, **84**: 1–76.
- Wheeler, A.** 1991. The Linnaean fish collection in the Zoological Museum of the University of Uppsala. *Zoological Journal of the Linnean Society*, **103**: 145–195.
- Wheeler, A.** 1992. A list of the common and scientific names of fishes of the British Isles. *Journal of Fish Biology*, **41**, Suppl. A: 1–37.
- Whitehead, P.J.P.** 1973. The clupeoid fishes of the Guianas. *Bulletin of the British Museum (Natural History) (Zoology)*, Supplement **5**: 1–227.
- Willughby, F.** 1686. *De historia piscium libri quatuor, jussu et sumptibus Societatis Regiae Londiniensis editi*. (J. Rajus, Ed.). 343 pp., Appendix 30 pp., pls. A–X, 10 appendix pls. Londinium.
- Yang Jiming.** 1982. The dominant fish fauna in the North Sea and its determination. *Journal of Fish Biology*, **20**: 635–643.